UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,393	11/26/2001	David M. Coumoyer	67008-025/S-5557	1778

26096 7590 07/21/2003

CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

EXAMINER	
DEL SOLE, JOSEPH S	

ART UNIT	PAPER NUMBER
1722	5

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

MK-5

Office Action Summary	Application No.	Applicant(s)	
	09/995,393	COURNOYER ET AL.	
	Examiner	Art Unit	
	Joseph S. Del Sole	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *18-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-17* is/are rejected.

7)☒ Claim(s) *2* is/are objected to.

8)☒ Claim(s) *1-21* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-17, drawn to a molding apparatus, classified in class 425, subclass 389.

   II. Claims 18-21, drawn to a molding process, classified in class 264, subclass 510.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process such as a vacuum assisted infusion molding process of a plurality of dry fibrous layers.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. David L. Wisz on July 8, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-17. Affirmation of this election must be made by applicant in replying to this

Office action. Claims 18-21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

6. The information disclosure statements filed 11/26/01 and 6/9/03 comply with the provisions of 37 CFR 1.97, 1.98 and MPEP 609. It has been placed in the application file and the information referred to therein has been considered as to its merits.

Drawings

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "VB" as discussed at page 9, the second line of paragraph 34. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 11-12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Palmer et al (4,942,013).

Palmer et al teach a semi-rigid mold member (Fig 10A) having a first ply (Fig 10A, #173); a second ply (Fig 10A, #181) adjacent the first ply; a sieve member (Fig 10A, #177) adjacent the first ply and the second ply; a rigid mold member (Fig 10A, #170') matable with the semi-rigid mold member; and a third ply (Fig 10A, #199) adjacent the second ply and fourth ply (Fig 10A, #205) adjacent the third ply.

10. Claims 1 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hooper (5,576,030).

Hooper teaches a semi-rigid mold member (Fig 3) having a first ply (Fig 3, #32); a second ply (Fig 3, #37) adjacent the first ply; a sieve member (Fig 3, #34) adjacent the first ply and the second ply; and a rigid mold member (Fig 3, #12) matable with the semi-rigid mold member.

11. Claims 1, 11-12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Filsinger et al (DE10013409C1).

Filsinger et al teach a semi-rigid mold member (Fig 6) having a first ply (Fig 6, #13); a second ply (Fig 6, #7) adjacent the first ply; a sieve member (Fig 6, #15) adjacent the first ply and the second ply; and a rigid mold member (Fig 6, #3) matable with the semi-rigid mold member; and a third ply (Fig 6, #32) adjacent the second ply and a fourth ply (Fig 6, #19) adjacent the third ply.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 3, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmer et al (4,942,013) in view of Dublinski et al (5, 071,338).

Palmer et al teach the apparatus as discussed above.

Palmer et al fail to teach the plys being a fluoroelastomer material.

Dublinski et al teach a mold for impregnation having first, second, third and fourth plys made of a fluoroelastomer material (Fig 3, #s5-8 and col 5, lines 11-43) for the purpose of providing stiffness and rigidity in detail areas while allowing flexibility and stretch (col 6, lines 3-6).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Palmer et al with the first, second, third and fourth plys being made of a fluoroelastomer material as taught by Dublinski et al because it provides a combination of stiffness/rigidity and flexibility and stretch.

16. Claims 3, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Filsinger et al (DE10013409C1) in view of Dublinski et al (5, 071,338).

Filsinger et al teach the apparatus as discussed above.

Filsinger et al fail to teach the plys being a fluoroelastomer material.

Dublinski et al teach a mold for impregnation having first, second, third and fourth plys made of a fluoroelastomer material (Fig 3, #s5-8 and col 5, lines 11-43) for the purpose of providing stiffness and rigidity in detail areas while allowing flexibility and stretch (col 6, lines 3-6).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Filsinger et al with the first, second, third and fourth plys being made of a fluoroelastomer material as taught by

Dublinski et al because it provides a combination of stiffness/rigidity and flexibility and stretch.

17. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hooper (5,576,030) in view of Dublinski et al (5, 071,338).

Hooper teaches the apparatus as discussed above.

Hooper fails to teach the plys being a fluoroelastomer material.

Dublinski et al teach a mold for impregnation having first, second, third and fourth plys made of a fluoroelastomer material (Fig 3, #s5-8 and col 5, lines 11-43) for the purpose of providing stiffness and rigidity in detail areas while allowing flexibility and stretch (col 6, lines 3-6).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Hooper et al with the first, second, third and fourth plys being made of a fluoroelastomer material as taught by Dublinski et al because it provides a combination of stiffness/rigidity and flexibility/ stretch.

18. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmer et al (4,942,013) in view of Forster et al (5,897,739).

Palmer et al teach the apparatus as discussed above.

Palmer et al fail to teach an FEP (fluorinated ethylene propylene) layer adjacent the first ply and opposite the second ply.

Forster et al teach an FEP layer (Fig 3, #52) adjacent a first ply (Fig 3, #54) for the purpose of releasing a mold from a cured composite (col 7, lines 6-30 and col 5, lines 27-44).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Palmer et al with a release layer made of FEP as taught by Forster because it assists in the removing of a mold from cured composite.

19. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Filsinger et al (DE10013409C1) in view of Forster et al (5,897,739).

Filsinger et al teach the apparatus as discussed above.

Filsinger et al fail to teach an FEP (fluorinated ethylene propylene) layer adjacent the first ply and opposite the second ply.

Forster et al teach an FEP layer (Fig 3, #52) adjacent a first ply (Fig 3, #54) for the purpose of releasing a mold from a cured composite (col 7, lines 6-30 and col 5, lines 27-44).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Filsinger et al with a release layer made of FEP as taught by Forster because it assists in the removing of a mold from cured composite.

20. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hooper (5,576,030) in view of Forster et al (5,897,739).

Hooper teaches the apparatus as discussed above.

Hooper fails to teach an FEP (fluorinated ethylene propylene) layer adjacent the first ply and opposite the second ply.

Forster et al teach an FEP layer (Fig 3, #52) adjacent a first ply (Fig 3, #54) for the purpose of releasing a mold from a cured composite (col 7, lines 6-30 and col 5, lines 27-44).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the peel ply of Hooper (Fig 3, #21) with a release layer made of FEP as taught by Forster because it assists in the removing of a mold from cured composite.

21. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Palmer et al (4,942,013), Hooper (5,576,030) or Filsinger et al (DE10013409C1) in view of Stofko (5,096,409).

Palmer et al, Hooper and Filsinger et al each teach the apparatus as discussed above, including teaching the sieve being made of metal (Hooper: col 4, lines 60-65 and col 5, lines 10-15.

Palmer et al, Hooper and Filsinger et al each fail to teach the sieve being made of stainless steel providing approximately 60 micron retention.

Stofko teaches a stainless steel sieve (Fig 2, #43) for the purpose of providing strength and prevent unnecessary elastic deformation (col 5, lines 31-47).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the sieves of either Palmer et al, Hooper or

Filsinger et al with a stainless steel sieve as taught by Stofko because the stainless steel material provides structural stability.

22. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmer et al (4,942,013) and Forster et al (5,897,739) in view of Dublinski et al (5,527,414).

Palmer et al and Forster et al teach the apparatus as discussed above.

Palmer et al fail to teach a rigid reinforcement insert between the third ply and the fourth ply, the reinforcement insert including a metallic sheet.

Dublinski et al teach a rigid metallic sheet reinforcement insert between plys (Fig 1, #22) for the purpose of facilitating pressure distribution during co-curing (col 6, lines 4-26).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Palmer et al with a rigid reinforcement sheet as taught by Dublinski et al because it assists in distributing pressure.

23. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Filsinger et al (DE10013409C1) and Forster et al (5,897,739) in view of Dublinski et al (5,527,414).

Filsinger et al and Forster et al teach the apparatus as discussed above.

Filsinger et al fail to teach a rigid reinforcement insert between the third ply and the fourth ply, the reinforcement insert including a metallic sheet.

Dublinski et al teach a rigid metallic sheet reinforcement insert between plys (Fig 1, #22) for the purpose of facilitating pressure distribution during co-curing (col 6, lines 4-26).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Filsinger et al with a rigid reinforcement sheet as taught by Dublinski et al because it assists in distributing pressure.

24. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Palmer et al (4,942,013) and Forster et al (5,897,739) and Dublinski et al (5,071,338) in view of Dublinski et al (5,071,338).

Palmer et al, Forster et al and Dublinski et al ('338) teach the apparatus as discussed above.

Palmer et al fail to teach the third and fourth plys including a fiber reinforced fluoroelastomer material.

Dublinski et al ('338) teach a mold for impregnation having first, second, third and fourth plys made of a fiber reinforced fluoroelastomer material (Fig 3, #s5-8, col 5, lines 11-43 and col 6, lines 29-43) for the purpose of providing stiffness and rigidity in detail areas while allowing flexibility and stretch (col 6, lines 3-6).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Palmer et al with the first, second, third and fourth plys being made of a fiber reinforced fluoroelastomer material

as taught by Dublinski et al ('338) because it provides a combination of stiffness/rigidity and flexibility and stretch.

25. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Filsinger et al (DE10013409C1) and Forster et al (5,897,739) and Dublinski et al (5,071,338) in view of Dublinski et al (5,071,338).

Filsinger et al, Forster et al and Dublinski et al ('338) teach the apparatus as discussed above.

Filsinger et al fail to teach the third and fourth plys including a fiber reinforced fluoroelastomer material.

Dublinski et al ('338) teach a mold for impregnation having first, second, third and fourth plys made of a fiber reinforced fluoroelastomer material (Fig 3, #s5-8, col 5, lines 11-43 and col 6, lines 29-43) for the purpose of providing stiffness and rigidity in detail areas while allowing flexibility and stretch (col 6, lines 3-6).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Filsinger et al with the first, second, third and fourth plys being made of a fiber reinforced fluoroelastomer material as taught by Dublinski et al ('338) because it provides a combination of stiffness/rigidity and flexibility and stretch.

26. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmer et al (4,942,013) in view of Dublinski et al (5,527,414).

Palmer et al teach the apparatus as discussed above.

Palmer et al fail to teach a rigid reinforcement insert between the third ply and the fourth ply, the reinforcement insert including a metallic sheet.

Dublinski et al teach a rigid metallic sheet reinforcement insert between plys (Fig 1, #22) for the purpose of facilitating pressure distribution during co-curing (col 6, lines 4-26).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Palmer et al with a rigid reinforcement sheet as taught by Dublinski et al because it assists in distributing pressure.

27. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Filsinger et al (DE10013409C1) in view of Dublinski et al (5,527,414).

Filsinger et al teach the apparatus as discussed above.

Filsinger et al fail to teach a rigid reinforcement insert between the third ply and the fourth ply, the reinforcement insert including a metallic sheet.

Dublinski et al teach a rigid metallic sheet reinforcement insert between plys (Fig 1, #22) for the purpose of facilitating pressure distribution during co-curing (col 6, lines 4-26).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Filsinger et al with a rigid reinforcement sheet as taught by Dublinski et al because it assists in distributing pressure.

Allowable Subject Matter

28. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

29. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, while teaching a sieve member, fails to teach the sieve member embedded in the first ply.

References of Interest

30. Filsinger et al (US20003/0011094) is cited of interest to show the state of the art.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph S. Del Sole whose telephone number is (703) 308-6295. The examiner can normally be reached on Monday through Friday from 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Wanda Walker, can be reached at (703) 308-0457. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for non-after finals and (703) 872-9311 for after finals.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Joseph S Del Sole

J.S.D.
July 15, 2003

ROBERT DAVIS
PRIMARY EXAMINER
GROUP 1300 / 1700

7/17/03